Research shows gender difference in energy compensation effect

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The results of a new scientific study from Oxford Brookes University show that the consumption of caloric beverages has different affects on short-term total energy intake in men and women.

The study, conducted by Viren Ranawana and Professor Jeya Henry of the Functional Food Centre at Oxford Brookes University, is the first of its kind to compare the compensation effect of liquid calories on short-term energy consumption, by gender.

During the research, male and female subjects consumed orange juice from concentrate, semi-skimmed milk, a sugar-sweetened fruit drink, or a calorie-free fruit drink, one hour before their lunchtime meal. Each group was then provided with a self-selection buffet, including a variety of foods in ample quantity, and the amount of energy they then freely consumed was analysed and compared.

The results show that liquid calories are detected by the body and compensated for at the next meal. Both men and women who consumed a drink containing calories in the morning ate less energy for lunch, compared to when they had a calorie-free mid-morning drink. However, while the mean total energy intakes for men following all four beverages were similar, women demonstrated a trend for greater energy intake following the three caloric drinks compared to the control. Thus, using a preload paradigm differing in protocol to previously reported studies, the new research gives evidence of a possible energy compensation dysregulation in women compared to men.

Professor Henry, of Oxford Brookes University, said: "It is important to understand if the growth in caloric beverage consumption is contributing to the increased prevalence of obesity and diabetes. It has been suggested that sugars provided in liquid form encourage 'passive over-consumption' of energy from food, but this study shows that the body does compensate in the short term. Further research is now needed to understand the mechanisms involved and whether the body also compensates for liquid calorie consumption in the long term."

More information: Ranawana, D. V., & Henry, C. J. K. (2010) Are caloric beverages compensated for in the short-term by young adults? An investigation with particular focus on gender differences. *Appetite*, 55, 137-46.

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